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Patent Application: 10/681,497

This Fax contains an Appeal Brief for Appl 10/681,497 in response to the Office Action of 1 December 2006.

Examiner Matthew J Daniels

Inventor: Stephen G. Bales

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# TRANSMITTAL FORM

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| Application Number | 10/681,497 |
| Filing Date | October 6, 2003 |
| First Named Inventor | Stephen G. Bales |
| Art Unit | 1732 |
| Examiner Name | Matthew J. Daniels |
| Attorney Docket Number | LA 001 |
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## ENCLOSURES *(Check all that apply)*

- [ ] Fee Transmittal Form
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- [x] Amendment/Reply
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- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
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- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
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- [ ] Other Enclosure(s) (please Identify below):

**Remarks**

This Appeal Brief is in response to the Final Rejection Office Action of 1 December 2006.

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | | | |
|---|---|---|---|
| Firm Name | | | |
| Signature | [signature] | | |
| Printed name | Stephen G. Bales | | |
| Date | Dec. 21, 2006 | Reg. No. | |

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
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| Appl. No. | : | 10/681,497 |
| Applicant | : | Stephen G. Bales |
| Filing Date | : | October 8, 2003 |
| Title | : | Lignocellulosic, Borate Filled, Thermoplastic Composites |
| Examiner: | | Matthew J. Daniels |
| Art Unit | : | 1732 |
| Docket No. | : | LA 001 |
| Customer No. | | 000048373 |

## APPEAL BRIEF

December 21, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Brief is an appeal from the Final Office Action of the Examiner dated 1 December 2006.

All appropriate filing fees were previously paid.

Respectfully,

Stephen G. Bales

Inventor

# TABLE OF CONTENTS

## I. REAL PARTY IN INTEREST

The real party in interest for the present appeal is the inventor Stephen G. Bales.

## II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of other appeals or interferences currently in process that will directly affect or be directly affected by or having a bearing on the present appeal.

## III. STATUS OF CLAIMS

The above-referenced application has Claims 1–6, 8–12, 14-18, 20-22, 24-27, 30, and 31 pending that now stand rejected. Claims 1-6, 8-12, and 14–15 are the subject of this appeal.

## IV. STATUS OF AMENDMENTS

Following the Final Office Action of 5 April 2006, an Amendment was filed on 28 August 2006 that removed all new matter and resolved the rejection of claims 1, 2, 16, and 17 under 35 USC § 112. The examiner subsequently filed a Supplemental Final Rejection of 1 December 2006. No amendments have been filed since receipt of that Supplemental Final Rejection.

## V. SUMMARY OF CLAMED SUBJECT MATTER

Independent Claim 1

The claimed subject matter of independent claim 1 is an improvement that increases the resistance of lignocellulosic thermoplastic composites, commonly known as Wood-Plastic Composites (WPC's), to surface visual impairment caused by mold. The claim states: "In the method for forming lignocellulosic thermoplastic composite products such as to increase their resistance to surface visual impairment caused by mold attack, the improvement which comprises incorporating an amount of boron-containing fungicide prior to forming said composite product." The problem of mold is addressed at [0003: 8-

18], the general approach of adding a fungicide is discussed in [0004: 1-7] and the specific use of a boron-containing fungicide is described at [0008: 1-6] and [0010: 1-8]. The method of incorporating the fungicide is described at [0012: 1-9].

Independent Claim 2

The claimed subject matter of independent claim 2 is similar to that of claim 1, with the addition of a range limitation: "In the method for forming lignocellulosic thermoplastic composite products such as to increase their resistance to surface visual impairment caused by mold attack, the improvement which comprises incorporating an amount of boron-containing fungicide in the range of from about 2 to 12 percent by weight of said composite product prior to forming said composite product." This is described at [0010: 1-5] and [00017: 1-2].

Dependent Claim 3

The subject matter of dependent claim 3 is similar to that of claim 1 with a further range limitation: "The method according to claim 1 in which said amount of boron-containing fungicide is in the range of from about 3 to about 5 percent by weight of said composite product." This is described at [0010: 5-8] and [0017: 2-3].

Dependent Claim 4

Dependent claim 4 limits the types of lignocellulosic material: "The method according to claim 1 in which said lignocellulosic material is selected from the group consisting of wood, ground rice hulls, kenaf, jute, and coconut shells." These are described at [0003: 1-2].

Dependent Claim 5

Dependent claim 5 limits the types of thermoplastic material: "The method according to claim 1 in which said thermoplastic material is selected from the group consisting of polyethylene, high-density polyethylene, polystyrene, and polyvinyl chloride." These are described at [0003: 2-3].

Dependent Claim 6

Dependent claim 6 is similar to that of claim 1 with the limitation that the boron-containing fungicide is calcium borate: "The method according to claim 1 in which said boron-containing fungicide is calcium borate." The use of calcium borate is described at [0005: 1-9], [0006: 1-7], and [0013: 1-4].

Dependent Claim 8

Dependent claim 8 further limits the type of calcium borate: "The method according to claim 6 in which said calcium borate is a naturally occurring borate." This is described at [0014: 1-3].

Dependent Claim 9

Dependent claim 9 limits the calcium borate to five specific naturally occurring types: "The method according to claim 8 in which said calcium borate is selected from the group consisting of nobelite, gowerite, hydroboracite, ulexite and colemanite." This is described at [0013: 6-8] and [0014: 1-3].

Dependent Claim 10

Dependent claim 10 limits the calcium borate to a synthetic type: "The method according to claim 6 in which said calcium borate is a synthetic borate." This is described at [0014: 1-2].

Dependent Claim 11

Dependent claim 11 limits the boron-containing fungicides to three types: "The method according to claim 1 in which said boron-containing fungicide is selected from a group consisting of zinc borate, calcium borate, boric acid or mixtures thereof." Zinc Borate is identified at [0004: 8-16], calcium borate at [0003: 1-9], [0013: 1-4], and [0006: 1-7], and boric acid at [0013: 1-2].

Dependent Claim 12

Dependent claim 12.further limits the calcium borate to one specific naturally occurring material: "The method according to claim 8 in which said calcium borate is colemanite." The selection of colemanite is described at [0014: 1-3].

Dependent Claim 14

Dependent claim 14 is similar to that of claim 1 with the limitation that the boron-containing fungicide is zinc borate: "The method according to claim 1 in which said boron-containing fungicide is zinc borate." Zinc borate is identified as a boron-containing fungicide at [0004: 8-16].

Dependent Claim 15

Dependent claim 15 is similar to claim 1 with the limitation that the lignocellulosic material is wood: "The method according to claim 1 in which said lignocellulosic material is wood." Wood is identified as a lignocellulosic material at [0003: 1].

## VI. Grounds of Rejection to be Reviewed on Appeal

A. The 35 U.S.C § 102 rejection of claims 1,4,5,11, and 14-15 as being unpatentable over Aida (USPN 5221781) is to be reviewed on appeal.

B. The 35 U.S.C § 102 rejection, or in the alternative the 35 U.S.C § 103 rejection, of claims 2 and 3 as being unpatentable over Aida (USPN 5221781) is to be reviewed on appeal.

C. The 35 U.S.C § 103 rejection of claims 6 and 8-12 as being unpatentable over Aida (USPN 5221781) in view of Lloyd (USPN 6368529) is to be reviewed on appeal.

The provisional rejection of claims 1-4, 6, 8-11,14-18,20, 22, 24-27, and 31 as being unpatentable under the judicially created doctrine of obviousness-type double patenting over claims 1-12 of co-pending Application No. 10/909,053 in view of Nadkarni (USPN 5514478) has been addressed in Amendments to the '053 application. The '053 application is an improvement that consists of one boron compound and a dust reducing amount of moisture. Application 10/681,497 makes no mention of moisture. Applicant believes this issue is now resolved.

The provisional rejection of claims 1-11, 14-27 and 31 as being unpatentable under the judicially created doctrine of obviousness-type double patenting over claims 1, 2 ,5, 7, 10-12, 15-17, and 20 of co-pending Application No. 11/149,808 in view of Ohkawa (USPN 4891399) has been addressed by Applicant's filing of a Terminal Disclaimer.

## VII. Arguments

### A. The 35 U.S.C § 102 REJECTION OVER AIDA (USPN 5221781) SHOULD BE REVERSED.

Claims 1, 4, 5, 11, and 15

The instant invention solves the problems of environmentally and economically increasing the resistance of thermoplastic lignocellulosic composites to mold discoloration when exposed to unprotected outdoor conditions. Claim 1 of the instant invention solves this problem by adding an amount of a boron-containing fungicide to the composite to control the visual impairment of the surface. In contrast, Aida teaches a thermoplastic resin composite balanced in rigidity, heat and impact resistance and flame resistance that can consist of thousands of possible combinations of different chemicals.

In addition to thermoplastic resins, which could even be nonexistent (4:12-15) or mixed with 9 types of rubbery substances, Aida teaches the following additives: 36 inorganic fillers (5:64-6:10), 18 organic fire retardants (6:34-55), 23 inorganic fire retardants (6:62–7:3), and 11 organic fillers (6:18-21). Further, the inorganic fillers and inorganic flame retardants can be selected in combinations (6:11-12 and 7:3-5). Three of Aida's 23 inorganic fire retardants are boron containing: zinc borate, zinc metaborate, and barium metaborate; however none of the exemplified compositions includes either these three borates or a lignocellulosic material.

To obtain the three possible Claim 1 compositions one of ordinary skill would be required to pick and choose from the thousands of combinations presented by Aida.

Appellant submits that Aida does not clearly and unequivocally disclose the claimed invention and does not lead one skilled in the art to the invention without picking and choosing from thousands of possibilities. Aida lacks the specificity to support a finding of anticipation and Appellant urges reversal of the rejection based on 35 U.S.C. § 102.

Claim 14

Claim 14 limits the boron-containing fungicide to zinc borate. All the previous arguments for claim 1 apply and are amplified as now only one possible combination would apply. But there is no direct disclosure of the three elements identified in the OA at page 8: thermoplastic resin, wood powder, and zinc borate.

Again, Aida lacks the specificity to support a finding of anticipation.

**B. The 35 U.S.C § 102 or IN THE ALTERNATIVE THE 35 U.S.C § 103 REJECTION OVER AIDA (USPN 5221781) SHOULD BE REVERSED.**

Claims 2 and 3

**Compared to Claims 2 and 3 of the instant invention, Aida solves a different problem, optimizes on totally different parameters and provides no motivation or suggestion to form the composition identified by these claims.**

The rejection based on anticipation suffers from the identical issues as described above for Claim 1 as well as the issues regarding ranges described in this section.

The rejection based on obviousness suffers from any lack of suggestion or sign of motivation from Aida's teachings that would suggest to one skilled in the art to combine a thermoplastic resin, lignocellulosic material, and a boron compound as identified in the instant invention. "Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference." In Kotzab, 217 F .3d 1365, 1370, 55USPQ2d 1313, 1316-17 (Fed Cir 2000).

Aida not only teaches thousands of combinations of additives, his teaching is directed toward maintaining the impact resistance, flame resistance and dimensional stability properties of the rubber/plastic composition when combinations of fillers and fire retardants are added in an amounts ranging from 5 to 66 percent of the total weight. There is no discussion of mold growth or the resulting visual impairment of a thermoplastic lignocellulosic composite. Although the prior art need not address Appellant's problem for a finding of obviousness, it is a factor to be considered when addressing the question.

More importantly, Aida optimizes on parameters unrelated to this instant invention: Yield Strength, Heat Deformation Temperature, Flexure Modulus, Izod Impact Value, Heat Resistance, and the Oxygen Index (9:65 – 10:68). He provides no discussion of the relationship between zinc borate, or any borate compound, and its ability to provide resistance to mold impairment. Moreover, lignocellulosic material is mentioned as a possibility as an organic fillers additive, but then organic fillers are not discussed as being compatible with the other additives nor are they present in any of the 24 examples.

In summary, Aida does not recognize the problem being solved, does not recognize the critical properties focused on by the Appellant, provides little or no information regarding the relationship between organic fillers, thermoplastics and borate compounds, and teaches thousands of possible combinations. Therefore Appellant argues that one of ordinary skill in the art would not be motivated to modify this reference in a manner that would form the instant composition. The Office Action (OA) of 1 December 2006 does not identify any motivation or suggestion that would suggest the one combination selected for rejection should be picked from the thousands taught by Aida. Appellant urges reversal of the rejection of Appellant's claim 1 based on 35 U.S.C. § 103.

**In addition to the lack of a suggestion or motivation to combine elements, the present invention Claims 2 and 3 specify ranges outside that of Aida.**

The OA at page 8 states that Aida teaches the following ranges: 100 parts resin, 5-200 parts organic fillers including wood powder, and 5-200 parts of compounds including zinc borate; Appellant disagrees. First, Aida (3:35 and claim 1) specifically limits the total filler weight of all types, fillers (organic and inorganic) and flame retardants to a total of 200 parts (66.6% of the total composite), not 200 parts for fillers and another 200 parts for flame retardants. It is instructive to note Aida's claim 6 identifies that the filler of his claim 1 includes both flame retardants and inorganic fillers. Therefore, if Aida's claim 1, item H, did not refer to all four elements -- inorganic fillers, organic fillers, inorganic flame retardants, and organic flame retardants -- his invention would not

include any flame retardants which obviously is not the intent of the invention. Appellant therefore argues that Aida's heaviest total composite is 300 parts.[1]

Next, Aida teaches that zinc borate is an inorganic flame retardant (6:63-67) and when inorganic flame retardants only are used the range is 40 to 200 parts by weight (7:18-20). This range would be 40/300[2] (13.3%) to 200/300 (66.6%) of the total composite weight which is outside the ranges of Claims 2 (2-12% of the total weight) and 3 (3-5%).

**In the alternative, the Examiner's position that inorganic flame retardant loadings can be as low as 5 parts does not warrant a rejection for either anticipation or obviousness.**

(a). The Examiner's position would add a new limitation to Aida not found in the present invention.

Aida (7: 16-20) teaches that only organic flame retardants can be used at levels as low as 5 parts by weight and when used alone inorganic fire retardants must be at least 40 parts (13.3%). Appellant argues Aida therefore teaches using an inorganic flame retardant alone at loadings less than 40 parts (13.3%) would not achieve an acceptable degree of flame resistance; otherwise there would be no need for his statement. Therefore the assumption that Aida teaches less than 40 parts requires that there must also be an organic fire retardant in the composite to achieve a satisfactory result. The limitation that the composite must contain an organic fire retardant is not present in the instant invention although its borate loadings in Claims 2 and 3 are less than 13.3 percent.

(b) The ranges associated with the OA position are so broad they do not invite experimentation.

The Examiner's position is Aida teaches zinc borate could be loaded at 5 parts of the total weight. But if Aida teaches zinc borate can be loaded at 5 parts he also teaches it can be loaded at 0.1 part, since an organic flame retardant of at least 5 parts will be also required in either case. This gives a zinc borate range of approximately 0 – 66.6 percent combined with an inverse wood powder range of 66.6 – 0 percent. These ranges are so broad they do not offer an invitation to experiment or adjust in order to discover the

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[1] 100 parts resin and 200 parts filler, where filler can be an inorganic flame retardant, organic flame retardant, inorganic filler, organic filler or combinations thereof.
[2] 100 parts resin, 40 parts zinc borate and 160 parts wood powder

instant invention, especially since Aida provides no parameters relevant to mold resistance. The development of the referenced claims required non obvious invention.

**C. The 35 U.S.C § 103 (a) REJECTION OF CLAIMS 6 and 8-12 OVER AIDA (USPN 5221781) IN VIEW OF LLOYD (USPN 6368529) SHOULD BE REVERSED.**

Claims 6 and 8-12

**The first two criteria for a prima facie obviousness rejection have not been met.**

A *prima facie* obviousness rejection requires three criteria be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all claim limitations. (MPEP 706.02(j). Appellant submits the first two criteria have not been met.

a. The Examiner's assertion that Lloyd's teaching provides a motivation to use calcium borate is incorrect.

The assertion is made that three motivations exist to use calcium borate: (i) superior calcium borate flow properties, (ii) calcium borate is less toxic than zinc borate and (iii) there is less tool wear using calcium borate. Appellant claims none of the three constitute a motivation to use the material in lignocellulosic thermoplastic composites and one case actually teachs away from its use in this application.

(i). Lloyd's teachings concerning calcium borate flow properties would not provide a motivation to use this chemical in thermoplastic lignocellulosic composites and in fact teaches away from their use in these composites.

Lloyd does not claim that all calcium borates have superior flow properties but restricts this property to synthetic calcium hexaborate (10:15-20), then demonstrates in Tables 1a,b,c and at 7: 20-25 that only the naturally occurring colemanite is comparable to zinc borate in providing fungal resistance. Natural materials of any type include impurities, require grinding where very fine particle sizes are needed, and some forms contain substantial water content. Lloyd's example 3 identifies that the naturally occurring colemanite samples were required to be finely ground, and even then did not obtain the flowability performance exhibited by zinc borate or synthetic calcium hexaborate (Nobleite).

In summary: the calcium borate (colemanite) that was as effective at fungal control as zinc borate required grinding and even then did not flow as well, while only synthetic calcium hexaborate had better flow but was not as effective at fungal control. At a minimum this situation does not provide a motivation to use calcium borate over zinc borate and Appellant submits it teaches away from the use of the former chemical.

(ii) Lloyd's teaching that a calcium compound could be used in mulch or plant foods in wood composite waste is not applicable when thermoplastics are involved.

The Examiner cites Lloyd (8:50-67) to support the position that zinc borate has a higher toxicity than calcium borate. However Lloyd's teaching that waste wood products containing calcium borate could be used in plant foods or mulch, does not apply to wood plastic composites. These not only contain at least 25 percent plastic, they also contain many other chemicals as previously noted such as stabilizers, pigments and the like. It would be absolutely unacceptable to use this material in plant food or mulch. Moreover, plastic scrap is valuable and unlike wood composite waste it can be, and is, recycled back into the production process.

Hatton (APPL 2002/0182431) at 3: [0026] states it was shown that calcium borate was less toxic than zinc borate in tests upon minnows. However he cites no supporting evidence for this statement[3] and there is no record of this study in either the EPA or any

[3] None of Hatton's referenced documents addresses toxicological studies.

other public toxicological database[4]. Further, Hatton's data was published on 5 December 2002 and was not available when Appellant filed his provisional patent application on 18 November 2002.

(iii) Based on Lloyd's criteria for the cause of tool wear, the addition of calcium borate would cause the same or more tool wear than zinc borate.

Lloyd states: ""For example, in working with composites containing zinc borate, metal tools ... may suffer significant wear and permanent damage due to the borate's hardness" (1:53-55). The only reason cited by Lloyd for possible increased tool wear is hardness; no other evidence or studies are cited in his supporting IDS materials. The Mohs hardness of zinc borate is 4.0 and for colemanite, the only calcium borate with comparable effectiveness at containing fungus in wood, is 4.5. Based on Lloyd's premise, that the hardness of the additives causes tool wear, colemanite has no advantage over zinc borate.

In summary, none of the advantages taught by Lloyd pertaining to the use of calcium borate in lignocellulosic composites turn out to be an advantage when its use in thermoplastic lignocellulosic composites is analyzed.

b. There was no reasonable expectation that calcium borate would provide effective protection in an outdoor environment.

The second criteria for establishing a *prima facie* finding of obviousness requires a probability of success; this is not the case for calcium borate when used to solve the problem resolved by the present invention. Lloyd teaches that unlike zinc borates which are low in solubility(1:46-47), calcium borates have some water solubility, and provide rapid and continuing pesticidal activity in composites subject to exposure in low moisture environments such as use in structural siding (2:42-46). Structural siding is protected by a covering such as stucco, which eliminates direct contact with moisture. However the primary use of lignocellulosic thermoplastics is for decking and fencing which are directly exposed to the elements.

[4] The EPA database does identify zinc borate as having practically no effect on the mallard or bluegill.

Borates have mobility in lignocellulosic materials which allows protection against fungus and mold throughout the composite product; the more soluble borates have increased mobility at higher moisture levels. However care must be taken when recommending an application depending upon the solubility of the borate under consideration. At low moisture levels, a soluble or slightly soluble borate will provide ongoing protection, but at higher levels the borate content will deplete rapidly resulting in little or no protection. Lloyd's teaching would be a warning to one skilled in the art to avoid, or at a minimum to anticipate unacceptable results with, calcium borate in products that have a direct contact with moisture.

However the results of the instant invention indicate that the interaction of this chemical with the other components in a thermoplastic lignocellulosic composite provides effective mold resistance over an extended period when exposed to high moisture conditions.

**The use of calcium borate to provide resistance to surface impairment in thermoplastic lignocellulosic composites caused by mold represents a new use of the chemical at ranges that differ significantly from Lloyd's teaching (Lloyd's 1, 2, 3, and 6).**

The use of calcium borate to control mold growth in thermoplastic lignocellulosic composites is a new use of this chemical. This use is unlike Lloyd's teaching to incorporate it into lignocellulosic composites to resist fungal decay and attack from such insects as termites and wood-boring beetles (2:11-13). Fungal decay, caused by *Wood Rotting Basidiomycetes* (WRB) creates structural damage. Lloyd states "The amount of calcium borate incorporated into the composite is a pesticidal amount; that is an amount sufficient to control or kill fungi and/or insects that destroy wood and similar cellulosic-based composite products (3:53-56). Lloyd's Example 1 clearly indicates that his teaching is the use of this chemical to resist decay fungus: the test fungi are WRB's[5], the soil block test is the standard protocol for decay testing, and weight loss is the standard metric used to measure the amount of decay. Finally, Lloyd's overall range is about 0.1-4.5 percent and about 0.5-2 percent for optimum performance (3:52-63).

[5] *Trametes versicolor and Gloeophyllum trabeum*

The instant invention uses calcium borate to control molds which are distinctly different from WRB's. Mold, commonly called mildew, is ubiquitous and resistant to desiccation and UV radiation; their taxonomies are quite different from those of WRB's). Unlike WRB's, mold does not cause structural damage but rather create an unsightly appearance. The best known way to limit mold germination is to eliminate sources of moisture, but this is impossible in wood-plastic materials such as railing and decking that are used in an outside environment. The instant invention provides this protection by requiring chemical loadings significantly higher than those needed for fungal control. The claimed ranges are 2-12 percent and preferably 3-5 percent, which differ significantly from Lloyd's disclosed ranges.

## D. CONCLUSION

For at least the above reasons, the claims 1-6, 8-12, and 14-15 are believed to be patentable over the cited references. Accordingly it is respectfully requested that the rejections of these pending claims be reversed.

## VIII. Claims Appendix

1. In the method for forming lignocellulosic thermoplastic composite products such as to increase their resistance to surface visual impairment caused by mold attack, the improvement which comprises incorporating an amount of boron-containing fungicide prior to forming said composite product.
2. In the method for forming lignocellulosic thermoplastic composite products such as to increase their resistance to surface visual impairment caused by mold attack, the improvement which comprises incorporating an amount of boron-containing fungicide in the range of from about 2 to 12 percent by weight of said composite product prior to forming said composite product.
3. The method according to claim 1 in which said amount of boron-containing fungicide is in the range of from about 3 to about 5 percent by weight of said composite product.
4. The method according to claim 1 in which said lignocellulosic material is selected from the group consisting of wood, ground rice hulls, kenaf, jute, and coconut shells.
5. The method according to claim 1 in which said thermoplastic material is selected from the group consisting of polyethylene, high-density polyethylene, polystyrene, and polyvinyl chloride.
6. The method according to claim 1 in which said boron-containing fungicide is calcium borate.
7. (canceled)

8. The method according to claim 6 in which said calcium borate is a naturally occurring borate.

9. The method according to claim 8 in which said calcium borate is selected from the group consisting of nobleite, gowerite, hydroboracite, ulexite and colemanite.

10. The method according to claim 6 in which said calcium borate is a synthetic borate.

11. The method according to claim 1 in which said boron-containing fungicide is selected from a group consisting of zinc borate, calcium borate, boric acid, or mixtures thereof.

12. The method according to claim 8 in which said calcium borate is colemanite.

13. (canceled)

14. The method according to claim 1 in which said boron-containing fungicide is zinc borate.

15. The method according to claim 1 in which said lignocellousic material is wood.

# IX. Evidence Appendix

None

## X . Related Proceedings Appendix

None